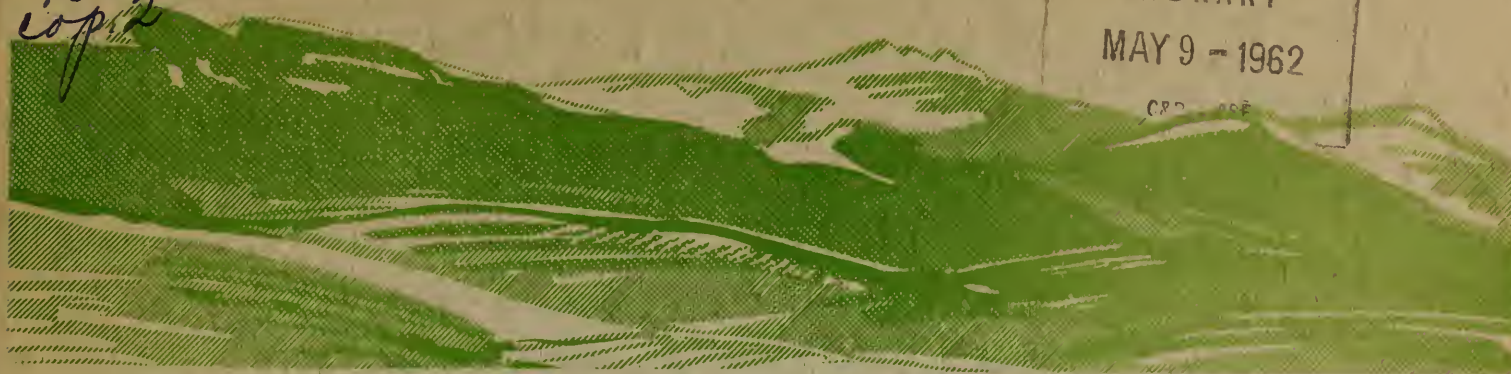


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RANGE IMPROVEMENT



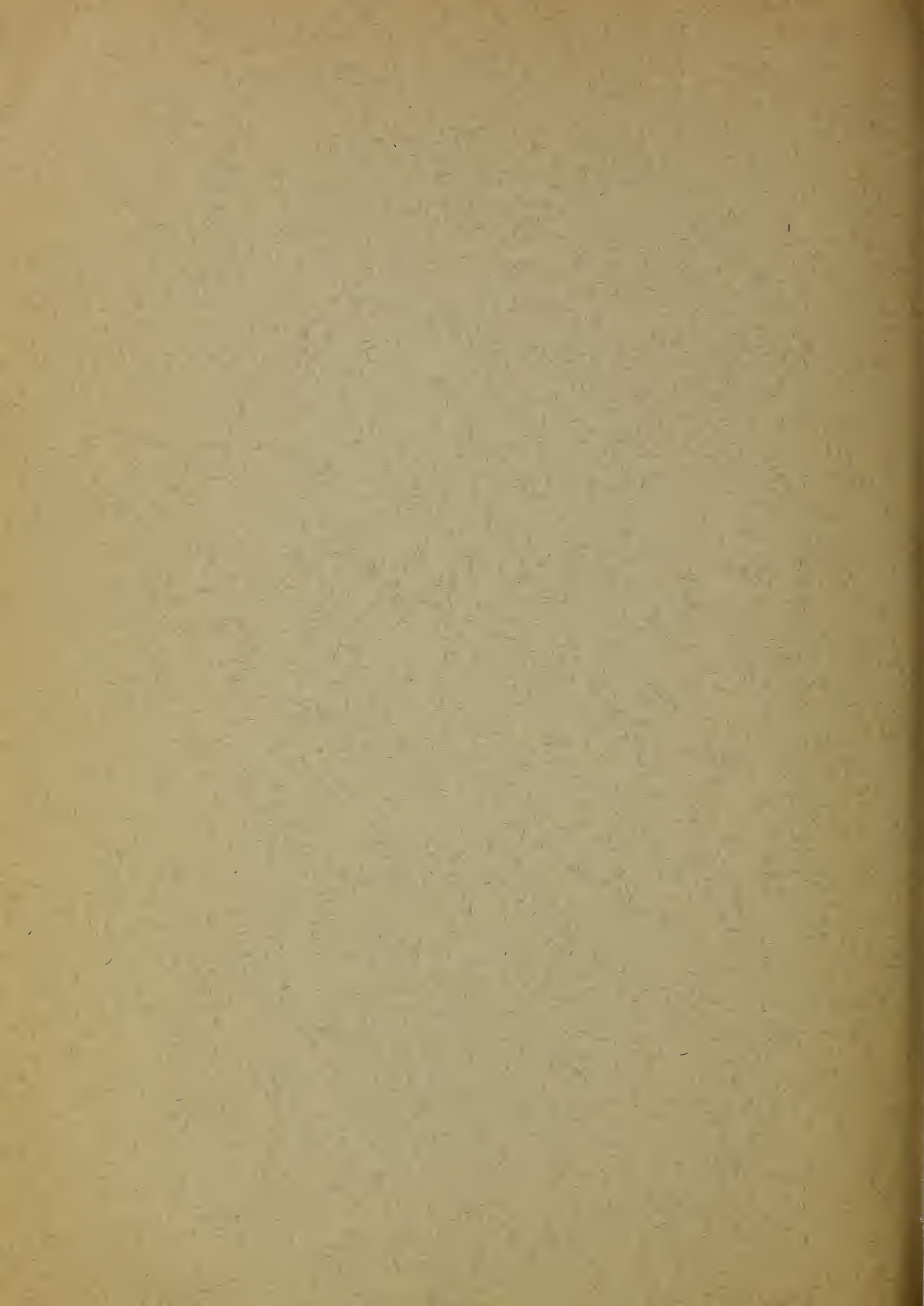
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NOTES

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(AGRI.-OGDEN)



RESULTS OF SAGE SPRAYING IN EASTERN OREGON TOLD

(Oregon Farmer, May 16, 1957)

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How much increase in grass can you expect from spraying several thousand acres of sagebrush range? Do all perennial grasses produce more forage immediately? And how much bitterbrush is killed?

Results of a 1955 spraying trial in Grant County, Oregon, can help answer some of these questions. County Agent Bill Farrell, cooperating with several ranchers, arranged for the spraying. This was done in May, 1955, by airplane with 1-1/2 to 2 pounds of butyl ester of 2,4-D per acre. Test plots to check results were established by Oregon State College range researchers. Here's what the trial showed:

Don't expect big first-year yield increases from valuable grasses such as bluebunch wheatgrass and Idaho fescue. Big increases usually come from less valuable grasses such as bluegrass, junegrass, and squirreltail.

Select areas to spray that have fairly dense sagebrush and a good understory of plants which increase immediately - such as the squirreltail, bluegrass, and junegrass earlier mentioned. Provide enough ground control so pilots won't skip or miss spraying strips. Slow regrowth of more important grasses confirmed what research workers found in other areas. Even drought-stricken ranges don't recover

immediately after a year or two of normal rainfall. But rapid improvement can be expected from sagebrush ranges where well-distributed bunches of less desirable grasses remain. While quality of this feed is not as good as that of better grasses, a three-fold yield increase is often obtained a year or two after spraying.

Bitterbrush on sprayed Grant County ranges suffered a third to a half top kill the first year. Ability of 2,4-D to kill rabbitbrush varied. Heaviest kills were at lower elevations and on lighter-textured soils. These results confirm present recommendations to avoid spraying sagebrush areas containing large amounts of rabbitbrush. If rabbitbrush areas are to be sprayed, apply chemicals near the end of the effective killing period for big sagebrush.

Where sagebrush is not dense it was learned that more grass may be present than is at first apparent. One such Grant County range with a good understory of Idaho fescue was sprayed. From appearances it looked like the spraying had increased the grass stand. But close checking showed the amount of grass had not increased - it was only easier to see.

In a 1956 check on grass yields of sprayed-over unsprayed range, in areas where the sagebrush had been big and dense, forage yields had increased about 2-1/2 to nearly 4 times over that from the unsprayed checks. In this case grasses were mostly bluegrass and sedge.

LAY OFF THE GRASS

(Agricultural Research, July 1954)

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When Delilah cropped Samson's locks, the Biblical hero lost his strength till his hair grew out again. The same thing happens to grasses, says F. J. Crider, retired nursery division chief for the Soil Conservation Service at Beltsville, Maryland.

If you remove too much of the grass' top growth by grazing or mowing it closely, the roots will quit growing until the tops recover. Crider found this true in testing both cool-season and warm-season grass species. Taking off half or more of the foliage during the growing season caused root growth to stop for a time after each clipping. (The lone exception was orchardgrass following the first clipping.)

A single cutting that removed most of the foliage stopped root growth usually within 24 hours for periods ranging from 6 to 18 days. The grass root growth didn't resume till the top growth was well advanced. Repeating these severe clippings periodically, as in a system of rotation grazing, prevented root growth of all grasses for 25 to 45 days.

The percentage of roots that stopped growing varied with the amount of top that was taken off. With a single clipping of 50 percent of the foliage, 2 to 4 percent of the grass roots stopped growing for 14 days. After that, all the roots were growing again, and the plants were also producing some new roots. But removing 90 percent of the foliage

halted root growth completely for 17 days, and 40 percent of the roots were still inactive at the conclusion of the 33-day experimental period. Effects of such clippings repeated frequently, simulating continuous grazing, were much more severe.

Removing 50 percent of the foliage and clipping it back to that level three times a week stopped growth of 8 percent of the roots after the first clipping and of 52 percent at the end of the test period. All root growth stopped after the first clipping of 90 percent of the foliage, and subsequent thrice-weekly clippings prevented root growth for the entire test period. Although stoppage was somewhat less as smaller amounts of foliage were removed, no roots were growing at the close of the test where 70 percent or more of the tops has been clipped.

But removing 40 percent or less of the foliage didn't halt root growth. And clipping parts of bunchgrass plants stopped root growth for only those parts. This characteristic would seem to make cattle's "patchy" grazing a desirable habit.

Crider also noted that the number of roots at the end of a single-clipping tests ranged from 132 at the 10 percent clipping level to 32 at the 90 percent level. In repeated-clipping tests the range was from 156 at the 10 percent clipping level to 0 at the 70, 80, and 90 percent levels. And he found that among seven types of grasses that were clipped periodically - 2 to 4 times during the growing season - dried roots of

unclipped plants weighed eight times as much as those of the clipped plants.

Crider believes the damage from repeated heavy clippings is significant in soil conservation and pasture management; reducing the top more than half upsets the functioning of the root system and the plant as a whole. Because of continuous suppression of aboveground growth, the grass can't replenish its food reserves. So the effects of root inactivity are lasting. The plant thus weakened is less able to resist erosion and grazing, as well as drought, cold, and disease.

This is striking evidence that close grazing or mowing during the growing season - especially in periods of stress or in the late fall - may be practiced at the expense of stand establishment and maintenance.

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Bits of Philosophy

You can dodge facts, but you can't dodge the consequences of dodging them.

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It is always a good idea to keep your words soft and sweet, because you never know when you will have to eat them.

- - -

Knowledge is power, but like power, it must be hitched to something to be effective.

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UTILIZATION OF GRASSES ON SPRAYED SAGEBRUSH RANGE

(1956 Annual Report
Rocky Mountain Forest and Range Experiment Station)

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Both cattle and sheep prefer to graze on areas where most of the big sagebrush (Artemisia tridentata) has been killed, as shown by three years of study on sagebrush ranges near Lander, Wyoming.

Utilization was light on unsprayed check areas and was progressively heavier as more sagebrush was killed. As shown in the table, this trend was most pronounced on those areas grazed most heavily.

The same relationship existed for both bluegrasses (Poa secunda and P. cusickii) and the wheatgrasses, principally thickspike wheatgrass (Agropyron dasystachyum), even though the bluegrasses were grazed more heavily than the wheatgrasses.

Average Utilization of Grasses (1953-56) as
Related to Percentage of Sagebrush Killed on 4 Areas

Plant Groups	Sagebrush Kill	Utilization of grass by study area				
		M - 1	M - 5	M - 10	M - 12	Avg.
		----- Percent -----				
Wheatgrasses	0	7.0	7.4	12.3	5.2	8.0
	20	20.5	10.0	14.2	7.3	13.0
	40	23.2	12.0	23.0	11.3	17.4
	60	19.7	14.6	20.2	16.4	17.7
	80	25.8	16.6	24.0	18.5	21.1
Bluegrass	0	32.8	20.3	27.5	18.5	14.8
	20	49.0	28.1	36.6	23.1	34.2
	40	50.4	28.0	46.9	25.1	37.6
	60	53.9	29.7	44.4	28.9	39.2
	80	58.9	33.4	46.6	35.2	43.5

TIPS FOR BETTER FENCES

(Minnesota Extension Bulletin 272)

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Attaching wire to the wood post is one of the most important steps in building a fence.

Slope the staple against the pull of the wire and suspend the wire in the V notch against the post. For level ground and over knolls, slope the staples downward. In draws where the wire tends to lift, slope the staples upward. Staples can be made more secure by angling them slightly from parallel to the side of the post. This will reduce splitting, especially in small treated posts.

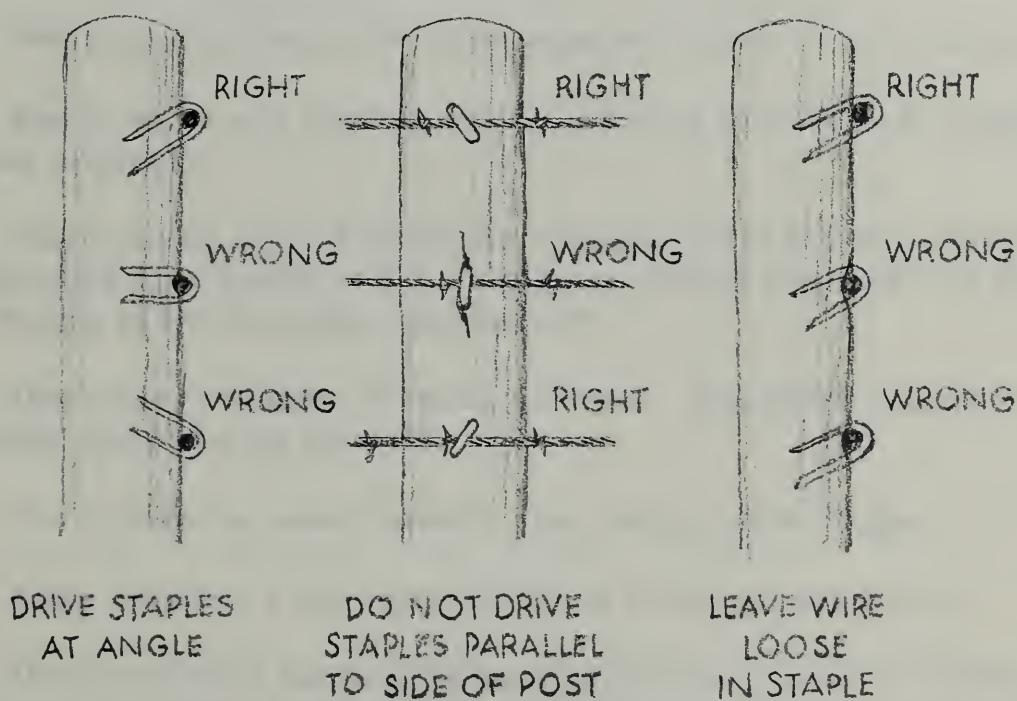
Staples should not be driven tight. The wire should always be free to move through the staple. Tight stapling not only damages the wire at the point of contact, but also limits seasonal expansion and contraction of the wire between posts.

Tight stapling also increases the damage when the wire is bumped by farm machinery and livestock. On corner construction, however, drive the staples even with the wire to distribute the pull against the entire corner. Except on corners, staples should never be placed over or adjacent to barbs on barbed wire or the stay wires or ties on woven wire, since this restricts free horizontal movement of the fence wire.

When stapling woven wire, staple the top and bottom wires at each post. Also staple every other wire between, alternating on successive

posts. When stapling the fence it is best to start about midway between the corners or ends and staple toward each end. This will give uniformly tight fence wire.

A heavy canvas carpenter's apron is a safe and convenient way to carry staples when fencing. One pocket can be used to accumulate old staples and short ends of wire.



SAFETY IN FENCING

(Minnesota Extension Bulletin 272)

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Building and repairing fences often results in serious cuts and tears of the skin. These injuries usually are ragged, difficult to heal, and frequently result in serious infections. Most of the injuries that result from fencing can be prevented by a few simple precautions:

1. Use close-fitting tough clothing when fencing - loose, ragged clothing easily catches on the wire.
2. Use extra heavy leather gloves.
3. Wear high-top boots for maximum protection to the ankles and legs.
4. Keep chains and clamps used to stretch wire in good condition and attached properly.
5. Stand on the side of the posts opposite from the wire when stretching it. The wire may break or the clamps or chains slip and it is dangerous to be caught in the twisting, rolling, wire.
6. Don't carry staples in pants pockets. The sharp points puncture the pocket and the skin beneath.
7. Put shields on power shafts when using power digger.
8. Keep children away from all fence building operations.
9. Don't rub your hands or gloves which have handled treated posts on unprotected skin. Some people are allergic to one or more of the preservatives used in treated wood posts. The face, neck, and other exposed skin may be irritated, especially on hot, windy, sunny days. A good skin lotion will usually give adequate protection.

